|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Unit 1: Biochemistry** | | | | | | | | | | | |
| Name: | | Start Date: | | | | | 08/29/17 |  | |  | |  |
|  | | Test 1 Date: | | | | | **09/25/17** |  | |  | |  |
| Period: | | Teacher: Ms. Jost | | | | | |  | |  | |  |
|  | |  |  | |  |  | |  | |  | |  |
| **BIOCHEMISTRY** | | Submitted | Resubmit | | Correct | Evidence of Learning | | Page # | | Date | | Sign-Off |
| **Objective 2:** Explain how enzymes act as catalysts for biological reactions | |  |  |  | | **HW: Lactose Intolerance Article** | | | -- | | 9/11 |  |
|  |  |  | | **Catalyst: Lactose Article Questions**  **Video: Intro to Enzymes**  **Lab: Lactase Enzyme (Part 1)** | | | 3 | |  |
|  |  |  | | 6 | |
|  |  |  | | 7 | |
|  |  |  | | **Catalyst: Latin Roots**  **Notes: Enzymes**  **HW: Lactase Enzyme Lab Conclusion** | | | 3 | |  |
|  |  |  | | 4 | |
|  | |  |  |  | | 12 | |
|  | |  |  |  | | **Catalyst: Enzymes Review**  **WebQuest: Enzymes** | | | 13 | |  |
|  | |  |  |  | | 14 | |
|  | |  |  |  | | **QUIZ: Objective 2 (Enzymes)** | | |  | | **9/18** |

**Unit 1: BioChemistry**

Start Date: 08/28/17

Test 1 Date: 09/25/17

**Objective 1:** Compare the structures and functions of the major biological molecules, organic and inorganic, as related to the survival of organisms.

*Essential Question:* What are the subunits and functions of the four major groups of organic molecules?

*Essential Question:* What are the properties of water?

*“I Can” Statements:*

* Compare and contrast the four major organic macromolecule groups in terms of:
  + The formative elements
  + The formative subunits (monomers)
  + Functions within the cell/organism
  + Where found in the diet (food sources)
* Describe the major properties of water and explain the importance of these properties in the context of sustaining life:
  + Universal solvent
  + High specific heat
  + Adhesion and cohesion
  + Capillary action
  + Density

**Objective 2:**  Explain how enzymes act as catalysts for biological reactions.

*Essential Question:* How and why do enzymes catalyze biological reactions?

*“I Can” Statements:*

* Demonstrate the link between shape and function as it relates to an enzyme-substrate complex, as well as the effects of environmental factors (temperature, pH) on enzyme efficiency
* Develop a cause-and-effect model for specificity of enzymes

**Vocabulary**

* Activation Energy
* Adhesion
* Amino Acid
* Capillary Action
* Carbohydrate
* Catalyst
* Cohesion
* Denature
* DNA
* Density
* Enzyme
* Fatty Acid
* Hormone
* Inorganic
* Lipid
* Macromolecule
* Monomer
* Monosaccharide
* Nucleic Acid
* Nucleotide
* Organic
* Peptide Bond
* Polarity
* Polymer
* Polysaccharide
* Product
* Protein
* Reactant
* RNA
* Solvent
* Solute
* Substrate

**Catalyst 1: Article Response Questions**

1. What is the difference between lact**ose** and lact**ase**?

2. What does it mean to be lactose intolerant?

3. How can lactose intolerance affect someone’s health? What major nutrient is found in milk?

4. Name three ways people who are lactose intolerant might change their diet to manage their condition:

1.

2.

3.

**Catalyst 2: Latin Roots**

Use your Latin roots packet and work with the people around you to define the following terms:

**1. Mono/mer-**

**2. Poly/sacchar/ide-**

**3. Cata/lyst**-

**4. Re/act/ion-**

**5. De/nat/ure-**

Biology I Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Notes: Enzymes Period: \_\_\_\_ Date: \_\_\_/\_\_\_/\_\_\_

**What is an enzyme?**

* Enzyme= biologically active \_\_\_\_\_\_\_\_\_\_\_\_\_\_that \_\_\_\_\_\_\_\_\_\_\_\_\_\_reactions
* Without enzymes most \_\_\_\_\_\_\_\_\_\_\_\_\_\_ reactions would not be able to occur or occur fast enough for organisms to survive

**Give an example of an enzyme you know and explain the reaction it catalyzes:**

**How do enzymes work?**

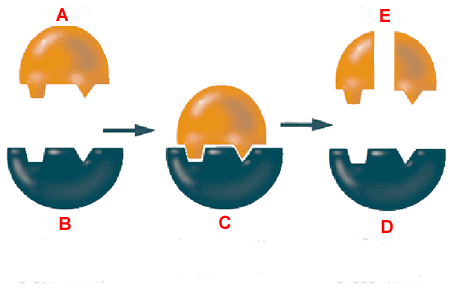
* Like the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the cell/body
* Enzymes lower the a\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ required to get a reaction started
  + Catalyst= a substance that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_the rate of a chemical reaction without itself undergoing any \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_chemical change.

**Think about the fact that Ms. J calls your daily “warm-up/do-now” a catalyst. How is this activity a catalyst for class each day?**

**How do enzymes work?**

* Step 1: Enzyme meets \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Step 2: Enzyme and substrate join at the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to form the enzyme-substrate \_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Step 3: Substrate is broken into \_\_\_\_\_\_\_\_\_\_\_\_\_

**Label the following picture using the terms enzyme, substrate, active site, products and enzyme-substrate complex:**



**Characteristics of enzymes:**

* Enzymes are:
  + Specific-
  + Reusable-
  + Sensitive-

**Enzyme Specificity**

* The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ model asserts that there is only one specific substrate for each type of enzyme

**Draw an enzyme and substrate and show how the enzyme is *specific* to that substrate:**

**Enzyme Reusability**

* Enzymes can \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the same reaction over and over again but they can only function so fast
* Eventually the rate of reaction will level out

**Explain how enzymes are similar to assembly line workers:**

**Enzyme Sensitivity**

* Enzymes function within an optimal range, outside of that range they can \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Denature= destroys the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the protein which disables functioning
  + Temperature
  + pH

**Think back to what you know about the high specific heat of water.**

**a) What would happen to the enzymes in our body if water had a lower specific heat?**

**b) Why do we get a fever when we are sick?**

**Our digestive enzymes**

* Protease-
* Lipase-
* Amylase-

**Introduction to Enzymes**

Video response questions:

1.What is an enzyme?

2. What does it mean to **catalyze** a reaction?

3. Where are digestive enzymes produced?

4. Where does digestion usually begin?

5. Proteins are primarily digested in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

6. How do the enzymes “digest” or break down the biomolecules?

7. How are nutrients distributed throughout the body?

8. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ foods are rich in digestive enzymes.

9. How does ageing affect enzyme production?

Video: <https://www.youtube.com/watch?v=AFbPHlhI13g>

Biology I Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Enzyme Lab Period: \_\_\_\_ Date: \_\_\_/\_\_\_/\_\_\_

**Objective 2:**  Explain how enzymes act as catalysts for biological reactions.



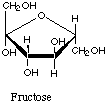
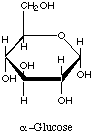
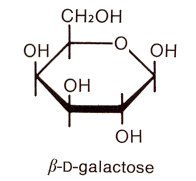
**Introduction:**

What is the topic of this ad? Who would use such a product? Why would they need it?

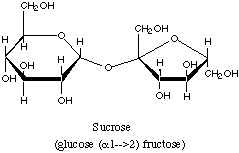
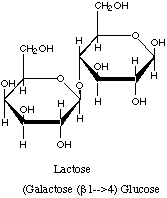
According to statistics, approximately one-third of all Americans feel ill after consuming milk and other dairy products. We were taught that we should “drink our milk” by our parents. “It is good for you, will help you have strong bones and teeth, and grow healthy and tall.” The nutritional value of milk is a fact. However, most animals stop drinking milk after they are weaned and their body chemistry changes so that they can no longer digest the sugar in milk. Worldwide this is also true of the human population. That is what is normal. It is actually unusual for adults to be able to digest milk easily.

In this lab activity, you will learn more about lactose intolerance. You will understand the chemical structure of lactose, why a person may have difficulty digesting milk, how lactose tolerance may have started, why so many Americans can digest it, and how lactose-reduced products can help people.

Lactose, the sugar found in milk, is a disaccharide composed of glucose and galactose (both six-sided sugars). Sucrose, ordinary table sugar, is also a disaccharide composed of fructose and glucose. Glucose is a six-sided sugar and fructose is a five-sided sugar.

Fructose Glucose Galactose

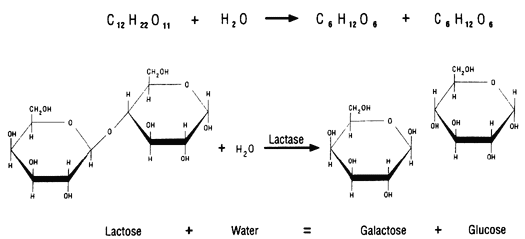
 

Sucrose Lactose

(Glucose + Fructose) (Galactose + Glucose)

Lactase is an enzyme that breaks lactose down into galactose and glucose. Lactase can be purchased in pill form by people who are lactose intolerant. These people lack the enzyme lactase, and cannot break down the sugar lactose into its component parts. Lactase is specific to lactose sugar and will not break down other disaccharides.

C12H22O11 + H2O → C6H12O6 + C6H12O6



Lactose + Water → Galactose + Glucose

In this lab, you will see lactase break lactose down into galactose and glucose by testing for the presence of glucose with glucose test strips. You will also observe what happens when lactase is added to sucrose and what happens if previously boiled lactase is added to lactose.

**PreLab Questions:**

1. What type of sugar is found in milk?
2. What two monosaccharides make up this sugar?
3. What type of biomolecule is lactase?
4. What is the difference between lactase and lactose?
5. What determines whether someone can digest lactose?

*Procedure Questions: Read the lab procedure and introduction to answer the questions below.*

1. What enzyme is being tested in this lab? What substrate does this enzyme work on?
2. What reaction is being tested?
3. How will the presence of glucose be tested?
4. If a sample tests positive for glucose, what does that tell us about the enzyme activity? Did the reaction occur?

**Materials**

* Droppers
* Glucose test strips
* Lactase enzyme solution
* Lactase solution - boiled
* Lactase solution – (acidic pH)
* Microwell plate
* Milk
* Sucrose solution
* White paper towel

**Procedure:** Assume that each well represents a person.

1. Put the microwell plate on a white paper. Label the well plate A, B, C, D, E, and F by writing on the paper towel.
2. In well A add 10 drops of milk and 5 drops of water. This represents a person who is lactose intolerant.
3. In well B add 10 drops of milk and 5 drops of lactase enzyme solution. This represents a person who has the lactase enzyme and can digest milk.
4. In well C add 10 drops of milk and 5 drops of boiled lactase enzyme solution. This represents a person who has the lactase enzyme, but boiling the enzyme has caused denaturation.
5. In well D add 10 drops of milk and 5 drops of basic (pH 11) lactase enzyme solution. This represents a person who has the lactase enzyme, but changing the pH of the enzyme has caused denaturation.
6. In well E add 10 drops of sucrose solution and 5 drops of lactase enzyme solution. This represents a person who has the lactase enzyme, but chooses to avoid consuming dairy products.
7. In well F add 10 drops of glucose solution. This represents a control for the experiment.
8. Dip the blue end of a glucose test strip into each well plate. Leave for a minute or so.
9. Set each glucose strip on a paper towel next to the corresponding well plate hole.
10. Wait ten minutes to read the results.
11. Record data in table. If there was glucose present mark a ‘+’ in the table. If glucose was absent, mark a ‘**―**’ in the table.

**Apparatus:**

Milk Milk Milk

**A** Water **B** Enzyme **C** Boiled enzyme

Milk Sucrose Glucose

**D** Acidic enzyme **E** Enzyme **F**

**Data**

|  |  |
| --- | --- |
| **Table 1: Glucose presence in the following solutions** | |
| **Type of solution** | **Positive or Negative glucose result** |
| **Trial A:** Milk and water (no enzyme) |  |
| **Trial B:** Milk and lactase enzyme solution |  |
| **Trial C:** Milk and boiled lactase enzyme solution |  |
| **Trial D:** Milk and basic (pH 11) lactase enzyme solution |  |
| **Trial E:** Sucrose solution and lactase enzyme solution |  |
| **Trial F:** Glucose solution (control) |  |

**Analysis & Conclusion**

1. Below is a diagram ofthe lactose and lactase reaction. ***Label*** the reactants and products.

(Hint: see pages 1 and 2 of this lab for help)



1. Which trials tested positive for glucose?
2. Which trials tested negative for glucose?
3. Why did we have only glucose in Trial F?
4. What did we do to the enzyme in Trial C? Did it affect whether the reaction occurred (was glucose present)?
5. What did we do to the enzyme in Trial D? Did it affect whether the reaction occurred (was glucose present)?
6. What did we do differently in Trial E compared to Trial B? Did it affect whether the reaction occurred (was glucose present)?
7. What was the purpose of this lab?
8. Write a concluding paragraph about this experiment.   
   - Start by restating the purpose of the lab in past tense.
   1. *The purpose of this lab was to….*

- Then name and describe the function of the enzyme explored in this investigation.

*b. The enzyme explored in this investigation was ….*

*c. Its function is to….*  
- Explain the results of each trial

*c.* For each trial (A-F):

*i. In trial A we…..*

*ii. The result of trial A were positive/negative because*

- What did you learn about enzymes by doing this lab?

*d. In this lab I learned….*

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

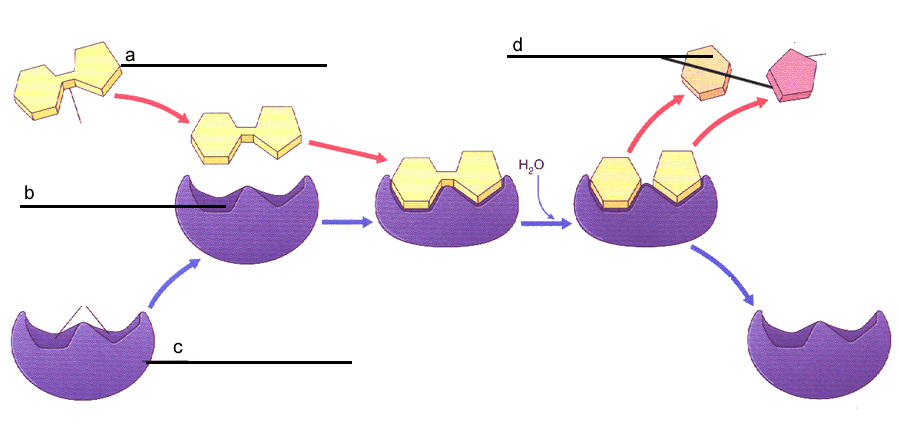
\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

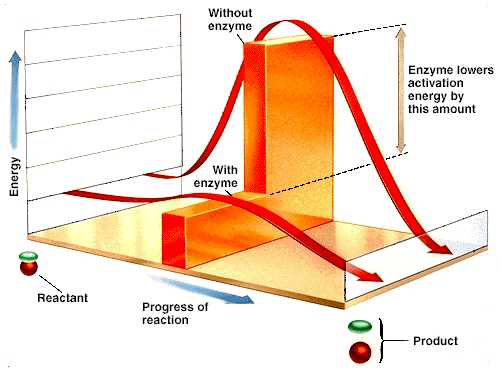
Biology Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Catalyst: Enzymes Review Period: \_\_\_\_ Date: \_\_\_/\_\_\_/\_\_\_

**Objective 2:** Explain how enzymes act as catalysts for biological reactions.

1. Label the diagram below using the following words:
   1. Active Site
   2. Enzyme
   3. Products
   4. Reactant



1. Answer *True* or *False* to the following statements:
   1. Enzymes only interact with one specific substrate \_\_\_\_\_\_\_\_\_\_
   2. Enzymes change shape after a reaction occurs \_\_\_\_\_\_\_\_\_\_
   3. Enzymes speed up reactions \_\_\_\_\_\_\_\_\_\_
   4. One enzyme can be used for many different types of chemical reactions \_\_\_\_\_\_\_\_\_\_
2. Circle the correct effect
   1. Raising the temperature [*increases | decreases | does not change*] the rate of reaction.
   2. Changing the pH away from normal will [*increase | decrease | not change*] the rate of reaction.
3. Label the graph below using the following words:
   1. Activation Energy
   2. Products
   3. Reactant
   4. With enzyme
   5. Without enzyme

WebQuest: Enzymes Period: \_\_\_\_\_ Date: \_\_\_/\_\_\_/\_\_\_

**Enzyme Web Quest**

**Instructions:** Use at least three of the following websites to help you answer the questions below:

<http://highered.mcgraw-hill.com/sites/0072495855/student_view0/chapter2/animation__how_enzymes_work.html>

<http://www.chem4kids.com/files/bio_enzymes.html>

<http://www.chem4kids.com/files/bio_enzymes2.html>

<http://programs.northlandcollege.edu/biology/Biology1111/animations/enzyme.swf>

<http://science.howstuffworks.com/environmental/life/cellular-microscopic/cell2.htm>

1. What are enzymes?
2. What would happen without enzymes?
3. True/False: Enzymes can help many different reactions; they are not specific in their functions.
4. What happens to an enzyme when it performs its function? What does this mean about enzyme molecules?
5. What determines an enzyme’s function, and how many functions does one enzyme have?
6. What can affect the shape of an enzyme molecule?
7. What is *denaturing*?
8. Write 1–2 sentences summarizing what this website says the job of enzymes is (What do they compare enzymes to in your everyday life?)?

**Types of Enzymes in the Human Body:**

Use your Google or Yahoo search engine to complete the following. For each enzyme listed below, search and read about the enzyme. *What does it help the body do*? *Where is it located in the body?* *What might happen if that enzyme was not there or did not work properly?* **Write AT LEAST three sentences for EACH enzyme**, AND write down which website(s) you got your information from!

1. Salivary Amylase:

Website(s) where I found my information:

1. Pepsin (protease):

Website(s) where I found my information:

1. Lactase:

Website(s) where I found my information:

1. Catalase:

Website(s) where I found my information: